

Reactive

REPORT OF HOME CANNING RESEARCH

CONFERENCE

held at

Kansas City, Missouri

December 5, 6, 7, 1946

Extension Service

U.S.D.A.

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S U M M A R Y

The conference was called by the Extension Service for the Bureau of Human Nutrition and Home Economics to present the findings and explain the background of research which has been going on in the Bureau for the past three years in the home canning of low-acid foods. The program also featured progress made along other lines of work recommended at the National Conference on Home Food Preservation held at Chicago in January 1944, including pressure gage testing, spoilage problems, freezing home produced food and methods of obtaining and evaluating statistical reports in home food preservation. The conference brought together Extension Specialists in charge of food preservation programs, staff members of the Bureau of Human Nutrition and Home Economics actively engaged in home canning research, members of the State Experiment Stations and persons from other fields who have been working on problems related to home canning processes and procedures. The general plan followed in the conference was:

1. Presentation of topics included in the program for discussion by various speakers.
2. Discussion period on each topic presented
3. Meeting of committees set up to summarize discussions and make recommendations.
4. Adoption of committee reports and recommendations.

The overall research program in home canning was presented the first day by Dr. Esther L. Batchelder, Head, Foods and Nutrition Division, Bureau of Human Nutrition and Home Economics, who also served as Chairman for the remainder of the day's program devoted to home canning research of the Bureau. Staff members of the Bureau actively engaged in home canning research presented and discussed the basic research reported in the U.S.D.A. Technical Bul. No. 930 - "Home Canning Processes for Low-Acid Foods." A popular statement on the research findings of the Bureau, together with the new canning directions for vegetables which will be recommended in forth-coming literature, is given in "New Scientific Facts on Home Canning of Low-Acid Foods" U.S.D.A., Bureau of Human Nutrition and Home Economics - 62 (12-5-46).

As a whole the conference served to:

1. Present the research findings of the Bureau of Human Nutrition and Home Economics in the home canning of low-acid foods and provide background information on which new processes recommended are based.
2. Suggest areas where further research in home food preservation is needed or desired.
3. Report progress and present status of certain phases of the educational program on home food preservation.
4. Make recommendations and develop materials to aid in furthering the food preservation program.

The program for the conference, committee reports adopted by the conference and certain materials developed for use in the educational program on home food preservation are embodied in this report.

COMMITTEE REPORTSADOPTED BY THE CONFERENCEProblems and Procedures

1. Additional research is needed on the use of pressure saucepans for canning. If pressure saucepans are equipped with gage suitable for indicating desired temperature at all altitudes, they appear to be satisfactory for canning. Satisfactory directions and timetables need to be established for the pressure saucepan.
2. Additional research is needed on processing times for cold packed meat and poultry packed without liquid and without exhausting.
3. Processes are needed for
 - a. Nuts (in addition to mimeographed material now available, more on pecans, walnuts and almonds).
 - b. Soup mixtures.
 - c. Baked beans.
 - d. Stews (including Brunswick stew)
 - e. Hominy.
 - f. Minced meat.
 - g. Celery.
 - h. Mushrooms.
 - i. Cream of Tomato Soup.
4. Additional research is needed on the length of boiling time (required after opening) for non-acid home canned foods that have been processed in the pressure cooker.
5. It is recognized that eventually we shall need information about processing times, palatability and nutritive value for 1-step, 2-step, and 3-step procedures 1/ and for processing in water bath and at pressures of 0 to 1 lbs., 5 lbs., 10 lbs., and 15 lbs. However, the 1-step procedure appears to have so much promise that it is recommended that research workers give special attention to it.

<u>1/</u>	<u>1-step</u>	<u>2-step</u>	<u>3-step</u>
	Cold food, hot liquid, partial seal, process	1. Food preheated in open kettle	1. Food preheated in open kettle.
		2. Processed.	2. Preheated again in container.
		or	
		1. Food preheated in containers in steamer or boiling water.	3. Processed.
		2. Processed	

6. Heat penetration studies are needed for processing fruits in the boiling water bath, with various depths of water over the jars.
7. Research is needed on the desirability of using the pre-cooking water for processing vegetables from the standpoint of nutritive values and palatability.

Chairman--Estelle Fournet,
Extension Specialist, Food
Preservation, Louisiana

Secretary--Mabel Doremus,
Extension Nutritionist,
Nebraska

Spoilage Clinics

It is recommended by the committee on spoilage clinics:

1. That spoilage clinics be held in States or counties where such meetings have not been held previously.
2. That where these clinics have been held, follow-up work be done. The following suggestions for these are given:
 - a. Glamorize canning demonstrations or meetings by using catchy title.
 - b. Publicize by dramatizing spoilage information through radio skits and question and answer type radio program.
 - c. Publicize canning information through newspapers and other sources.
 - d. Include copies of a canning trouble report blank in extension canning publications.
 - e. Make an effort to reach all professional people teaching food preservation, Home Demonstration Agents, Home Economics teachers, FHA workers, utility and public service companies, magazine columnists and farm editors.
3. That a simplified publication on spoilage be assembled by the Bureau of Human Nutrition and Home Economics for general distribution or that material on this subject from other States be made available in large quantities for use in the various States.
4. There is a definite need for a publication which will give professional workers the reason for various canning procedures and causes of spoilage.

Dr. Williams of Texas said he would send at least one copy of the Texas spoilage bulletin and chart to each State and he would investigate the possibilities of offering copies for sale. California will send a copy of their spoilage bulletin to each State and each person present at Kansas City.

Dr. Esselen's bulletin on spoilage can be made available to States. This will be handled through the Federal Extension office contacting State Extension publicity offices.

Chairman--Lavada Curtis,
Extension Specialist, Food
Preservation, Alabama

Secretary--Anna Wilson,
Extension Nutritionist,
South Dakota

Equipment Committee

The committee devoted most of its time to a discussion of standards for gages and gage testers.

The following recommendations are offered:

1. Since the inaccuracy of pressure gages is still one of the major problems in home canning, we recommended that performance standards be written to cover all types of pressure gages. The committee accepts Dr. Arnold Baragar's statement of performance standard for Bourbon type gages. ^{1/}
2. Since many professional persons believe it is desirable to have pressure cookers equipped with thermometers as well as gages, we recommend that specifications be drawn up for a suitable thermometer for pressure cookers and that steps be taken to have such a thermometer made available for new cookers and for installation in old cookers.
3. That the States continue the collection of data on the checking of gages. In order to gather evidence of different types of gages it seems desirable to get the information about each gage tested on a record that includes the following:
 - a. Space for gage reading at 5, 10, 15 lbs.
 - b. Check spaces for marking whether gages are geared, gearless or weight.
 - c. Space for numerical figure for age of gage.

The above sample form to be made available to the States from the Federal Extension Office as well as plans for summarizing.

4. The committee does not consider it necessary to send further information to the States on the types of gage testers used in various States. However, we do recommend that the suggested performance standards for gage testers be made available to each State.
5. That proper inspection and maintenance be stressed to insure safety in the use of the pressure cooker.

6. If pressure saucepans are equipped with gages suitable for indicating desired temperature, at all altitudes, they appear to be satisfactory for canning. Satisfactory directions and time tables need to be established for the pressure sauce pan.
7. That each State analyze their gage testing program to decide if it still has educational value, or if it has become routine service which could be transferred to others in the community.

Chairman--Elizabeth Ellis,
Nutritionist, New Hampshire

Secretary--Mrs. Evangeline J. Smith,
Extension Nutritionist, Wyoming

Home Freezing

It is recommended by the Committee:

1. That standards of performance for home freezer units be set up and made available to Extension workers.
2. That manufacturers be asked to give definite information to customers on the following points:
 - a. Temperature in all portions of the box.
 - b. Capacity to freeze.
 - c. Capacity to hold a given temperature.
 - d. Defrosting of the home freezer.
3. That the Bureau make available a preliminary release on what to look for when buying a home freezer cabinet. This is to be based on the work of Dr. Earl McCracken of the Bureau of Human Nutrition and Home Economics.
4. That Washington State and any other State doing such work put together material on building a home unit and make this material available.
5. That the Federal Extension Office make a compilation with annotations of the materials from different States on what to look for when selecting a home freezer unit. That they also make a similar compilation of information on new packaging materials. It will be necessary for all States to submit such materials to the Federal office.
6. That specialists from each State send copies of new bulletins and outlines from either Extension or the Experiment Station to the other States as soon as such bulletins or leaflets come from the press. Mr. K. F. Warner, Extension Service, also wanted to be included on these mailing lists.

7. This committee requests information on the following:
- a. Directions for preparing and packaging pre-cooked foods for freezing and preparing the frozen foods for the table.
 - b. Information regarding any difference in food value and palatability in chicken when it is frozen in water and when frozen without water.
 - c. Causes for chicken bones darkening when chicken is frozen.
 - d. Is it all right to dress, draw, and freeze poultry without pre-cooling it?
 - e. Is it safe and desirable to wrap and freeze warm, freshly dressed meat without pre-cooling?

Chairman--Gwendolyn Jones,
Extension Specialist Food
Preservation, Texas

Secretary--Mary Fletcher,
Extension Nutritionist,
Kansas

Statistical Reports in Food Preservation

The following suggestions and recommendations were made by the entire conference group, following discussion methods of obtaining and evaluating Statistical Reports in Home Food Preservation - led by Mary E. Loughhead, Extension Specialist in Food Preservation, Extension Service, U.S. Department of Agriculture, Washington, D.C.

1. Agreed by specialists present that a report of a reliable estimate of quantity of food preserved at home is desirable for each State to have annually. Such reports are widely used.
2. Divided opinion as to whether summary of quantitative results in home food preservation should be included in combined annual report of county Extension workers (Form ES-21).
3. If the food preservation report is to appear in the county Statistical Report, the methods of securing reports should be more or less uniform to be comparable. Reports should be a measure of progress in Extension and/or an index of family food supply in county or State.
4. Assistance from Division of Field Studies and Training on methods of sampling to secure reliable estimates on quantities of home preserved food would be appreciated. Such a sampling procedure should be as simple as possible and involve a minimum of time and personnel. It was further recommended that facilities of State Colleges be used when possible to work out sampling procedures.

